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Dated: December 9, 2008

Signature: 

(Frederick R. Handren)

Docket No.: 0080-0234PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Kensaku FUJII et al.

Application No.: 10/532,424

Confirmation No.: 3734

Filed: April 22, 2005

Art Unit: 1791

For: Tire with rotation period indication hole, and
method of indicating tire rotation period

Examiner: S. D. Maki

APPEAL BRIEF

MS AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Madam:

As required under § 41.37(a), this brief is filed within two months of the Notice of Appeal filed in this case on October 9, 2008, and is in furtherance of said Notice of Appeal.

The fees required under § 41.20(b)(2) are dealt with in the accompanying
TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1205.2:

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|------|-----------------------------------------------|
| I. | Real Party In Interest |
| II | Related Appeals and Interferences |
| III. | Status of Claims |
| IV. | Status of Amendments |
| V. | Summary of Claimed Subject Matter |
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- Appendix A Claims
- Appendix B Evidence
- Appendix C Related Proceedings

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is: Sumitomo Rubber Industries, Ltd.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

- A. Total Number of Claims in Application: There are 6 claims pending in the application.
- B. Current Status of Claims
 - 1. Claims canceled: 21
 - 2. Claims withdrawn from consideration but not canceled: none
 - 3. Claims pending: 12, 15-18 and 20
 - 4. Claims allowed: none
 - 5. Claims rejected: 12, 15-18 and 20
- C. Claims on Appeal: The claims on appeal are claims 12, 15-18 and 20

IV. STATUS OF AMENDMENTS

Appellant filed an Amendment after Final Rejection on September 10, 2008. The Examiner responded to the Amendment after Final Rejection in an Advisory Action mailed September 29, 2008. In the Advisory Action, the Examiner indicated that Appellants' proposed amendments to claims 12 and 16 would not be entered.

Accordingly, the claims enclosed herein as Appendix A do not incorporate the amendments to claims 12 and 16 proposed in the paper filed on September 10, 2008. However, the claims in Appendix A do reflect the cancellation of claim 21, as proposed in the paper filed by Appellant, along with the Notice of Appeal, on October 9, 2009.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The invention recited in claim 12 is a tire with one or more multi-step holes in the tread that provide a readily discernible indication of wear of the tread. As shown in drawing FIGS. 1(a) and 1(b) and described in the specification in the paragraph bridging pages 5-6, a rotation timing indication hole 5 is disposed in a tire tread portion 1.

As best shown in FIG. 2(a) and 2(b) and described on page 6, lines 16-25, a first step 20 of the hole 5 at the tread surface side, and opening through the tread surface 4, has a contour that may be fairly characterized as a "loop-shape formed by curved lines." As illustrated, the shape of the hole at the first step 20 is circular where the hole is bounded by the tread portion. Further down in the hole, closer to a bottom side than the first step, is a second step 21 that has a contour that may be fairly characterized as a "polygon formed by straight lines." A square shape of the second step is illustrated. The contour of the second step is obviously different from the contour of the first step. A stepped portion 22 is disposed between the first and second steps, 20, 21. The language used in the third and fourth paragraphs of claim 12 also reads on an iteration of the invention in which the contour of the first step is a polygon formed by straight lines, and the contour of the second step is a loop-shape formed by curved lines. See, for example, FIG. 3(a).

As described on page 7, lines 8-13, the square contour of the second step illustrated, e.g., in FIG. 2(a) is "inscribed in," the circular contour of the first step, but need not be so. "Inscribed on" (emphasis added), as used in claim 12, does not have a meaning that is different from "inscribed in." As described throughout the specification, the expression, "inscribed in" denotes a relationship of the contours of second step to the first step in which outermost points of the contour of the second step are coincident with the boundary of the first step. See, page 9, lines 18 and 22, and page 10, lines 1 and 5. Such a relationship is illustrated in FIGS. 3(a), (b), (c), (d) and (h). See also original claims 4 and 6. In the description of FIG. 3(e), in lines 7-10 on page 10 of the specification, the contour of the second step 21 (a hexagon) is characterized as "not inscribed in" the contour of the first step 20 (a circle). As illustrated in FIG. 3(e) the entirety of the contour of the second step 21 is spaced inwardly from the contour of the first step 20. The expression used in claim 12, "inscribed on or included in," reads on the relationship of the contours shown in FIGS. 3(a), (b), (c), (d) and (h) but is not limited to such a relationship and

reads also on a contour of the second step that is surrounded by the contour of the first step but not "inscribed in" the contour of the first step, as shown, for example, in FIG. 3(e). Apparently, this interpretation of "inscribed on or included in" is accepted by the Examiner and is not in dispute. See, for example the second paragraph on page 9 of the Final Rejection.

As shown in FIG. 2(a) and described on page 7, lines 1-7, and on page 7, line 14, through page 8, line 12, the first and second steps, 20 and 21 have depths L2 and L3, respectively, that are separately representative of different degrees of wear of a tread surface until tire rotation timing.

The foregoing summary of the claimed invention is made to comply with the U. S. Patent and Trademark Office rules in submitting briefs and is not to be considered as limiting the claimed invention. Also, the specific references to the drawings and specification herein are exemplary, and additional support for claim elements may be found in different portions of the drawings and specification.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The only ground of rejection to be reviewed on appeal is the rejection of claims 12, 15-18 and 20 under 35 USC § 103(a) as being unpatentable over JP 59-25684 (JP '684) in view of SU 408333 (SU '333) and optionally JP 55-110608 A (JP '608) and/or US 5980668 (Slingluff).

VII. ARGUMENT

THE REJECTION OF CLAIM 12

As stated in the Final Rejection

In the paragraph bridging pages 2-3, the Examiner specifically cites figure 2(f) of JP '684 as showing a wear indicating portion formed as a "hole" in the tread, with a first step at the tread surface and a second step at a lower depth of the tread. As characterized by the Examiner, the "first step has a contour of a wider polygon formed by straight lines," while "The second step has a contour of a narrower polygon formed by straight lines." The Examiner adds, "Since the ends of the narrower polygon contact the ends of the wider polygon, the contour of the second step (narrower polygon) of the wear indicating hole in Figure 2f is 'included in' the contour of the first

step." The Examiner acknowledges that JP '684 does not disclose "providing the steps of the wear indicating hole such that one step has a contour including a polygon formed by straight lines and the other step has a different contour including a loop shape formed by curved lines."

As discussed by the Examiner on page 4, in a first embodiment disclosed in SU '833 (per the Examiner, "Soviet Union") "... the wear indicator has the form of a stepped pyramid, which can be formed by shaping one of the tread projections ..." The Examiner also cites figure 3 of SU '833 as disclosing a second embodiment in which, according to the Abstract of SU '833, "... the wear indicator ... can have the form of an opening in one of these projections." From this, the Examiner concludes that SU '833 "teaches (1) a 'projection' for use as an indicator having a stepped [*sic*] or (2) a "hole" for use as an indicator having a stepped shape." The Examiner also cites SU '833 as teaching "a stepped wear indicator wherein the steps have the same contour (figures 4, 5) or different contours (figure 6)."

The Examiner cites JP '608 (per the Examiner, "Japan 608") as disclosing "a tire with a tread having a stepped hole 17 for indicating wear" and "using a tetragonal shape for the stepped hole."

The Examiner cites Slingluff as disclosing a wear indicator with pattern parts such as holes that indicate tread wear by the disappearance of the holes.

In the second full paragraph on page 5, the Examiner contends that the teachings in SU '833 would have made obvious a modification of the JP '684 "wear indicating hole such that one step (one perimeter edge) has a contour including a polygon formed by straight lines and the other step (other perimeter edge) has a different contour including a loop shape formed by a curved lines." In particular, the Examiner characterizes SU '833 as showing "facilitating visual identification of different steps of a wear indicator by providing one step with straight lines and another step with curved lines (see figure 6) as an alternative to providing all steps with straight lines (figure 4) or providing all steps with curved lines (figure 5)." The Examiner cites JP '684 and SU '833 as being "in the same field of endeavor of wear indicators for tires" and having "similarity in structure (steps) and function (indication of wear) as a basis for holding that using different shapes for the steps of the wear indicating hole of JP '684 would have been obvious and "only the expected results of facilitation of indication of tread wear being obtained."

In the paragraph bridging pages 5-6, the Examiner states, "it would have been obvious to provide the steps of Japan 684's stepped indicating hole *with depths* for indicating timing for rotation of a tire. The Examiner adds, "the applied prior art to Japan 608 and/or Slingluff teach using Japan 684's stepped hole (Figure 2f) as a 'rotation timing indication hole.'" In the first paragraph beginning on page 6, the Examiner states, "the perimeter of the second lower step of Japan 608 contacts the perimeter of the first upper step in the Figure 2f embodiment," adding, "this contact allows a large size lower step to be used."

In the paragraph bridging pages 7-8, the Examiner acknowledges that the edges of the steps of wear indicator shown in figure 2(f) of JP '684 are straight but adds that using "different shapes for edges of different steps of a wear indicator is not novel." The Examiner notes that figure 6 of SU '833 has three steps, the smallest having curved edges and the other two having straight edges and concludes, "The use of different shapes for the edges of the steps of Japan 684's tire tread wear indicator would have been obvious in light of Soviet Union's teaching to use **different shapes for the edges of different steps** of a tire wear indicator (figure 6) as an alternative to using the same shape for the edges of different steps of a tire tread wear indicator figure 4."

In the last paragraph beginning on page 8, the Examiner argues that JP '684 teaches a stepped tire tread wear indicator formed as a hole, while SU '833 teaches using different shapes, "such as a circle and a straight sided polygon," for the steps of an indicator.

In the second paragraph on page 9, the Examiner argues that, as shown in figure 6 of SU '833, "the circular edge of the first step is included in the straight sided polygon edge of the second step." The Examiner continues, "When viewed from above, the inclusion of the circle within the polygon of Soviet Union's stepped tire wear indicator is similar to that shown in figure 3(e) of applicant's application."

Elaboration by Examiner at June 25, 2008 Interview

The interview with Appellant's representative occurred at the Examiner's office. The Examiner argued that figure 3 of SU '833 illustrated a stepped void in a tread lug and did not illustrate a stepped projection in a hole of a tread, as argued by Appellant's representative. The

Examiner cited page 3, lines 1-3, and claim 3 on page 4 of an English translation of SU '833 (provided by the Examiner) as support for his position.

Elaboration by Examiner in September 29, 2008 Advisory Action

On pages 3-4 of the Advisory Action Attachment, the Examiner reiterates his position that figure 3 of SU '833 illustrates a "stepped recess in a lug" and not a stepped projection in an opening in the tread, as argued by the Appellant. Again, the Examiner cites page 3 and claim 3 of the English translation of SU '833 as supporting his position. The Examiner adds, "One of ordinary skill in the art would understand from Soviet Union that (1) when the lug tire tread of Figure 3 is new, a small diameter circular recess is visible and (2) as the tire tread wears, the diameter of the recess in the lug (block) of Figure 3 increases to a larger diameter and then to the largest diameter."

Elaboration by Examiner in November 7, 2008 Advisory Action

On page 2 of the Advisory Action Attachment, the Examiner makes no mention of SU '833 as teaching a stepped void in the tread, while maintaining that SU '833 "shows facilitating visual identification of different steps of a wear indicator by providing one step with straight lines and another step with curved lines (see figure 6) as an alternative to providing all steps with straight lines (figure 4) or providing all steps with curved lines (figure 5)." The Examiner then reiterates his position that the teachings in SU '833 would have made obvious a modification of the wear indicating hole of JP '684 in which the steps have different shapes.

APPELLANT'S ARGUMENTS

Rejection of claim 12 as stated in the Final Rejection and Advisory Actions and at the Interview

As disclosed in JP '684, wear indicating portion 2 may be formed as a "hole" in the tread. However, for the indicator shown in figure 2(f) of JP '684, as the tread wears down to the level of the steps below a new tread surface, the length of the hole (between the end walls 1) remains the same, while the width of the hole becomes smaller. In other words, as tread wear occurs, the rectangular configuration of the hole is maintained, while its proportions undergo change. The same effect occurs with the indicators shown in Figs. 2(a), 2(b), 2(c), 2(d) and 2(e), i.e., the general shape of the indicating recess is maintained, while the proportions thereof change.

On the other hand, in Appellant's disclosed and claimed invention, since (1) the first step of the indication hole has a contour including one of a polygon formed by straight lines or a loop-shape formed by curved lines, (2) the second step has a contour including the other of the polygon or the loop-shape and (3) the contour of the second step is different from the contour of the first step and is inscribed on or included in the contour of the first step, as the tire tread wears, the fundamental shape of the hole changes, and the progression of wear of the tread is thereby easily discerned.

In JP '684, there is no disclosure or suggestion of an indicator hole with a portion having straight lines *and* another portion having curved lines. Thus, as acknowledged by the Examiner, the shape of the wear indicator shown in figure 2(f) of JP '684 does not change between a shape having straight sides and a shape having curved sides as tread wear occurs. The tread wear indicator disclosed by JP '684 does not, then, reveal tread wear by an easily discernible change in the shape of the opening in the tread.

SU '833 also discloses tread wear indicators, in particular indicators in the form of projections with steps. Figures 2 and 4 of SU '833 show projections with straight-sided steps; figure 5 shows a projection with circular steps; and figure 6 shows a projection with two straight-sided steps and an upper circular step. Figure 3 of SU '833 clearly shows a projection with circular steps disposed in a recess in the tread.

The Examiner has disagreed with Appellant's characterization of the illustration in figure 3 of SU '833, insisting instead that this figure illustrates a stepped void in a tread element with a small circular opening through the surface of the tread element when the tread is new and larger diameter openings appearing at the tread surface as wear occurs. Appellant submits that the Examiner is incorrect. There is no disclosure or suggestion whatsoever in SU '833 that a void in the tread, as envisioned by the Examiner, is used as a tread wear indicator. Such a tread wear indicator would be difficult and costly to manufacture, entailing a separate molding of the tread and subsequent application to the tire carcass. Moreover, such an indicator would be explicitly at odds with the illustrations and word description in SU '833. Each of the 6 drawing figures in SU '833 clearly illustrates a tread wear indicator formed as a projection. The shading lines in the side walls of the steps of the indicator as shown in figure 3 clearly denote a solid element. If a

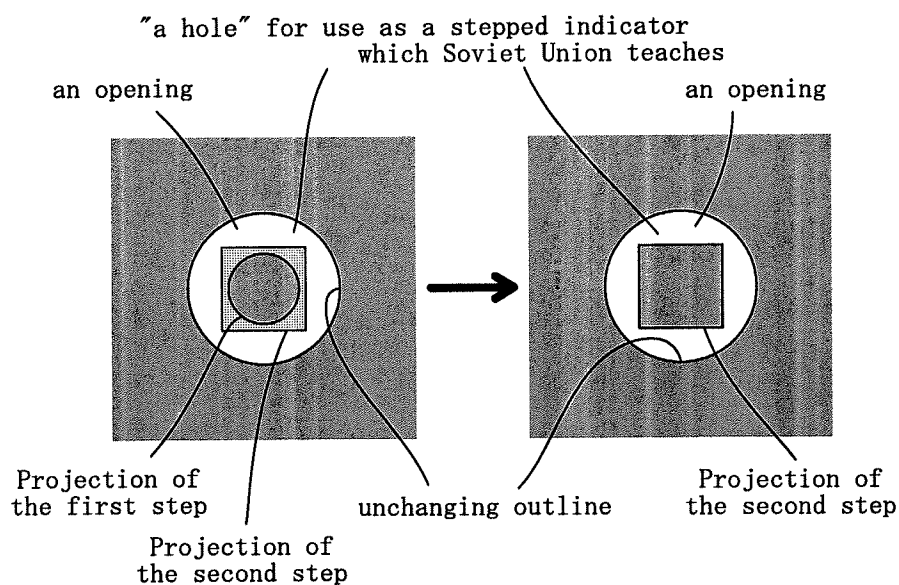
void in the tread was intended, it could have been easily illustrated. A projection *is* illustrated; a void *is not* illustrated. The first paragraph on page 3 of the English translation, cited by the Examiner, does not disclose otherwise: rather, it says, "the steps of the *indicator pyramid* can be formed by the side surfaces of individual blocks or by recesses in the individual blocks of the tread (emphasis added). Claim 3 of the translation uses similar language. Appellant submits that if a stepped *void* were intended, "pyramid" would not have been used to describe it. As shown in figure 3 of SU '833, the steps of the indicator pyramid can be formed by forming the pyramid in an opening in the tread. That is, the pyramid is surrounded by the opening. This interpretation of the language of the word description in the translation is consistent with the drawing figures. The Examiner's interprets the same word description as disclosing a stepped void in the tread in which the narrow end is at the tread surface. This interpretation is clearly at odds with the illustration in figure 3 of SU '833 of a pyramidal projection in an opening in the tread.

As noted above, in the second paragraph on page 9 of the Final Rejection, the Examiner states that, as shown in figure 6 of SU '833, "the circular edge of the first step is included in the straight sided polygon edge of the second step" and that, "When viewed from above, the inclusion of the circle within the polygon of Soviet Union's stepped tire wear indicator is similar to that shown in figure 3(e) of applicant's application." These statements are irrelevant to Appellant's claimed arrangement of the first and second steps: as recited in Appellant's claim 12, it is the contour of the *second* step that is "inscribed on or included in the contour of the *first* step" (emphasis added).

SU '833 does not disclose a tread wear indicator in which a "second step" has a contour including the other of the straight shape or the curved shape, the contour of the second step is different from the contour of a "first step" and *is inscribed on or included in* the contour of the first step as required by Appellant's claim 12. Each of the embodiments illustrated in figures 2-6 of SU '833 exhibit an inverse arrangement: a step corresponding to Appellant's "first step" is inscribed on or included in a step corresponding to Appellant's "second step."

In the figure 3 embodiment of the SU '833 tread wear indicator, tread wear causes a change in the appearance of the projection within a hole in the tread, i.e., the projection appears to become larger. The shape of the hole does not change. The illustrations below show a wear

indicator like the one shown in figure 6 of SU '833 disposed in an opening in a tread, in the manner shown in figure 3 of SU '833. In the illustration at the left, the cylindrical top step of the projection is visible at the tread surface. When the tread wears down to the level of the second step, the shape of the projection at the tread surface changes to a square, as shown in the illustration at the right. The shape of the opening does not change. This indicator *will* reveal tread wear by a *change in the shape of the projection* in an opening in the tread; but it *will not* reveal tread wear by a *change in the shape of the opening*.



In Appellant's disclosed and claimed invention, tread wear can be discerned from just the contour of the indication hole and does not require the more difficult task of discerning the shape of an indicator projection within a hole in the tread, as would be required in the use of the tread wear indicator disclosed in SU '833.

All of the tread wear indicators disclosed in JP '684 are in the form of stepped recesses or holes in the tread, while all of the tread wear indicators disclosed in SU '833 are in the form of stepped projections. Appellant therefore submits that the tread wear indicators disclosed in JP '684 and SU '833 are fundamentally different in structure and function and that the Examiner's characterization of these documents to the contrary is incorrect. The Examiner's proposal for modifying the JP '684 indicator in view of the disclosure in SU '833 would entail applying attributes of a stepped projection, as disclosed in SU '833, to a stepped recess, as disclosed in

JP '684. That is, the Examiner's proposal would require shaping the *sidewalls of the hole* disclosed in JP '684 so as to have a shape like the *sidewalls of the projection* disclosed in SU '833. Appellant submits that there is no disclosure in either of JP '684 and SU '833 that provides a sound basis for making the modification of JP '684 proposed by the Examiner and that the significant differences in the wear indicators disclosed in JP '684 and SU '833 would make the Examiner's proposal for modifying the JP '684 wear indicator improbable, not to mention unobvious. Appellant therefore disputes the Examiner's conclusion that, "one of ordinary skill in the art would have found it obvious to use *different shapes* for the steps of the wear indicating hole of Japan 684 - only the expected results of facilitation of indication of tire tread wear being obtained." Aside from the disclosure provided in this application, there is simply no basis for making the modification of the JP '684 wear indicator proposed by the Examiner.

As noted above, the Examiner cited JP '608 as disclosing a stepped hole 17 for indicating wear and cited Slingluff as disclosing a wear indicator with pattern parts such as holes that indicate tread wear by the disappearance of the holes. The Examiner's statement, in the paragraph bridging pages 5-6 of the Final Rejection, "the applied prior art to Japan 608 and/or Slingluff teach using Japan 684's stepped hole (Figure 2f) as a 'rotation timing indication hole,'" is factually incorrect. There are no such teachings in either JP '608 or Slingluff. It is apparent from the statement(s) of the rejection of claim 12, that the Examiner has relied principally on the disclosures in JP '684 and SU '833 and has not placed much reliance on the disclosures in JP '608 and Slingluff as a basis for rejecting Appellant's claim 12. In any event, there are no disclosures in JP '608 and Slingluff that could provide a basis for modifying the tread wear indicators disclosed in JP '684 so as to have one or more steps having a contour of a polygon formed by straight lines and one or more other steps having a contour of a loop-shape formed by curved lines, as required by Appellant's claim 12.

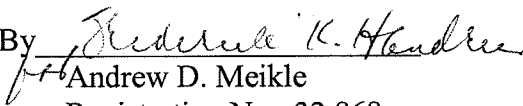
In view of the foregoing observations and arguments, Appellant submits that no reasonable combination of the disclosures in JP '684, SU '833, JP '608 and Slingluff can properly serve as a basis for rejecting independent claim 12 or dependent claims 15-18 and 20 under 35 USC § 103(a). Accordingly, Appellant respectfully requests that the Examiner's rejection of these claims be reversed.

VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A include the amendments filed by Appellant on October 9, 2009, and do not include the amendment(s) filed on September 10, 2008.

Dated: December 9, 2008

Respectfully submitted,

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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 10/532,424

12. A tire having a rotation timing indication hole comprising a multi-step hole defined in a tire tread, wherein

the multi-step hole includes a first step on a tread surface side and a second step located closer to a bottom side than the first step;

the first step has a contour including one of a polygon formed by straight lines and a loop-shape formed by curved lines;

the second step has a contour including the other of the polygon and the loop-shape, the contour of the second step being different from the contour of the first step and being inscribed on or included in the contour of the first step; and

the first step and the second step have depths separately representative of different degrees of wear of a tread surface until tire rotation timing.

15. The tire having the rotation timing indication hole as set forth in claim 12, wherein the loop-shape forms a rounded shape.

16. The tire having the rotation timing indication hole as set forth in claim 15, wherein the polygon is any one of a triangle, a square, a pentagon, and a hexagon; and the rounded shape is either one of a perfect circle and an ellipse.

17. The tire having the rotation timing indication hole as set forth in claim 12, wherein the first step has the contour including the loop-shape; and the second step has the contour including the polygon.

18. The tire having the rotation timing indication hole as set forth in claim 12, wherein the first step has the contour including the polygon; and the second step has the contour including the loop-shape.

20. The tire having the rotation timing indication hole as set forth in any one of claims 12 and 15 to 18, wherein the rotation timing indication hole comprises twelve holes, in total, arranged in pairs in the widthwise direction of the tire, the resulting six pairs of the holes being arranged at uniform intervals in a circumferential direction of the tire.

APPENDIX B

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the Examiner is being submitted.

APPENDIX C

No related proceedings are referenced in II. above, hence copies of decisions in related proceedings are not provided.